RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

February 1999

BUDGET ACTIVITY

4 - Demonstration/Validation

PE NUMBER AND TITLE

0603635M Marine Corps Ground Combat/Supporting Arms Systems

COST (In Thousands)	FY 1998 Actual	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
Total Program Element (PE) Cost	41118	54251	42654	17698	4900	3659	1078	796	Continuing	Continuing
C1964 Antiarmor Weapon System	327	427	633	610	640	896	832	551	Continuing	Continuing
C2112 Howitzer, Medium Towed 155MM XM777 (LW 155)	36180	32332	23237	12105	0	0	0	0	0	131931
C2113 Predator Short Range Assault Weapon (SRAW)	4611	12781	13371	492	0	0	0	0	0	144060
C2256 Integrated Infantry Combat System (IICS)	0	730	751	768	0	0	0	0	0	2249
C2507 Small Unit Riverine Craft (SURC)	0	0	3038	1750	226	10	0	0	0	5024
C2508 Light Strike Vehicle	0	0	1624	1973	4034	2753	246	245	122	10997
C2614 SMAW Follow-On	0	2993	0	0	0	0	0	0	0	0
C2615 Trajectory Corrected Munitions (TCM)	0	4988	0	0	0	0	0	0	0	0
Quantity of RDT&E Articles										

⁽U) <u>Mission Description and Budget Item Justification</u>: This PE supports the demonstration and validation of Marine Corps Ground/Supporting Arms Systems for utilization in Marine Air-Ground Expeditionary Force amphibious operations.

R-1 Line Item 57

Budget Item Justification

(Exhibit R-2, Page 1 of 32)

⁽U) <u>Justification for Budget Activity:</u> This program is funded under DEMONSTRATION & VALIDATION because it develops and integrates hardware for experimental test related to specific ground weapon system applications.

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)								DATE February 1999				
BUDGET ACTIVITY 4 - Demonstration/Validation		PE NUMBER AND TITLE 0603635M Marine Corps Ground Combat/Supporting Arms Systems								PROJECT C1964		
COST (In Thousands)	FY 1998 Actual	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost		
C1964 Antiarmor Weapon System	327	427	633	610	640	896	832	551	Continuing	Continuing		
Quantity of RDT&E Articles												

A. (U) Mission Description and Budget Item Justification:

(U) This project provides for Marine Corps participation in the Joint Anti-Armor Program entitled Javelin (Advanced Anti-Tank Weapon System - Medium (AAWS-M)) and the Anti-Armor Weapon System - Heavy (AAWS-H). The Javelin weapon system will provide the Marine Corps and Army with state-of-the-art capability to destroy sophisticated and future armored threats. No such medium anti-armor system is currently available to the infantryman. The AAWS-H is a long range, antitank weapon system that will replace the Tube Launched, Optically Tracked, Wire Guided Missile System. It will satisfy an operational requirement to provide increased range (4000 meters), increased lethality against all armored threats, to include explosive reactive armor, active protection, increased probability of hit and kill and increased gunner survivability. Possible Light Armored Vehicle-Anti Tank usage would promote commonality among Marine Corps systems.

(U) FY 1998 Accomplishments:

•	(U) \$	167	Conducted Engineering/Technical Support to monitor and participate in production qualification testing (PQT) & pre-planned product
			improvements (P3I) for Javelin.
	(II) \$	151	Conducted Engineering/Technical Support to monitor and participate in technical developments in the AAWS-H

(U) \$ Prepared necessary Marine Corps documentation for AAWS-H Milestone I.

(U)Total \$ 327

(U) FY 1999 Planned Program:

•	(U) \$	201	Engineering/Technical S	upport to monitor and	participate in PQT & P3I for Javelin.
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- (U) \$ 196 Engineering/Technical support to monitor and participate in developmental testing and technical developments in the AAWS-H program.
- Prepare necessary Marine Corps documentation for the AAWS-H program. (U) \$
- Portion of extramural program reserved for Small Business Innovation Research assessment in accordance with 15 USC 638. (U) \$

(U)Total \$ 427

R-1 Line Item 57

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit) BUDGET ACTIVITY 4 - Demonstration/Validation PE NUMBER AND TITLE 0603635M Marine Corps Ground Combat/Supporting Arms Systems PROJECT C1964

(U) FY 2000 Planned Program:

- (U) \$ 237 Engineering/Technical support to monitor and participate in PQT and P3I for the Javelin program.
- (U) \$ 372 Engineering and Technical Support to monitor and participate in technical developments in the AAWS-H program.
- (U) \$ 24 Prepare necessary Marine Corps documentation for the AAWS-H program.

(U)Total \$ 633

B. (U) Project Change Summary	FY 1998	FY 1999	FY 2000
(U) Previous President's Budget	411	429	489
(U) Adjustments to Previous President's Budget	-84	-2	+144
(U) Current Budget Submit	327	427	633

(U) Change Summary Explanation: Decrease of \$84 thousand due to minor affordability changes in FY 1998. FY 2000 increase is due to increased participation in both the Javelin and AAWS-H programs in response to complying with directions as to be set forth in the results of the Anti-Armor Requirements study and revised economic assumption and general adjustments.

C. (U) Other Program Funding Summary	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	To	Total
(APPN, BLI #, NOMEN)									Complete	Cost
(U) PMC BLI# 301100	57,802	82,653	92,737	32,181	1,048	1,065	114	139	0	305,890

(U) Related RDT&E

PE 0604611A

R-1 Line Item 57

RD	T&E BUDG	ET I	TEM JUSTIFICAT	ION SHEET (R-2	Exhibit)		DATE February	/ 1999	
BUDGET ACTIVITY 4 - Demonstration				PE NUMBER AND TITLE 0603635M Marine Corps Ground Combat/Supporting Arms Systems					
D. (U) Schedule Profile									
<u>Javelin</u>									
	FY1998		FY 1999	FY2000	FY2001	ТО	COMPLETE		
Program Milestones									
Contract Milestones	1Q MY Contract Award		3Q MY Contract Award	1Q FY00 2 nd Multiyear Contra Award (FY00-02)	act				
Fielding			3Q FY99-4Q FY03						
AAWS-H									
	FY 1998		FY 1999	FY 2000	FY 2001	TO COMPLI	<u>ETE</u>		
Program Milestones			MS I						
Studies & Analysis Milestones			1Q Analysis of Alternatives						
Developmental Testing -	Army		۸۸						
Fielding		TBD							
				R-1 Line Item 57		Budg	jet Item Justification	n	
						(Exhib	it R-2, Page 4 of	32)	

(Exhibit R-2, Page 4 of 32)

RDT&E BUDGET IT	EM JUS	TIFICA	TION	SHE	EET (R	R-2 Exhi	bit)		DATE Fe	bruary 19	999
BUDGET ACTIVITY 4 - Demonstration/Validation				0603		TITLE Marine Coporting	PROJECT C2112				
COST (In Thousands)	FY 1998 Actual	FY 1999 Estimate	FY 2000 Estimate		FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
C2112 Howitzer, Medium Towed 155MM XM777 (LW 155)	36180	32332	232	237	12105	0	0	0	0	0	131931
Quantity of RDT&E Articles	8										

A. (U) Mission Description and Budget Item Justification: (U) The LW155 is the replacement for the aging, operationally deficient M198 155 Howitzer for the Marine Corps and the Army. The LW155 retains the current M198 howitzer's range, but will weigh 9,000 pounds compared to the M198's 16,000 pounds. The weight reduction significantly improves transportability and mobility by sea, air, and land platforms and enables the LW155 to emplace, displace, and bold shift in half the time of the current system while increasing the rate of fire. Thus, the LW155 provides greater transportability and mobility in strategic/tactical movements. The LW155 is a joint Marine Corps and Army program, with the Marine Corps as the Lead service. The Joint Operational Requirements Document (JORD) was approved by the Assistant Commandant of the Marine Corps on 27 June 1996. The JORD was validated and approved by the Army on 29 September 1995. A MS I/II Marine Corps Program Decision Memorandum (MCPDM) was approved on 5 February 1996. After a ten month "shoot-off" between competitors a three year EMD contract was signed with Cadillac Gage Textron Inc. on 17 March 1997. On 21 December 1998, the three parties involved in the development of the LW155 signed a novation agreement whereby Vickers Shipbuilding and Engineering Limited (VSEL) took over prime contractor responsibilities from Cadillac Gage Textron. Textron, VSEL and the government were all in agreement that this move was in the best interest of fielding the advanced Howitzer to Marine and Army units.

(U) FY 1998 Accomplishments:

• (U) \$ 2,100	Provided government program management support.
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- (U) \$ 2,110 Provided Army Research, Development, and Engineering Center (ARDEC) matrix development engineering to system, logistics, safety, quality assurance, corrosion prevention.
- (U) \$ 2,195 Provided other government development engineering to system, logistics, safety, quality assurance and included forward finance \$800K of the FY 1999 effort.
- (U) \$ 24,225 Continued contractor development engineering and prototype manufacturing. Labor/material for 8 prototypes.
- (U) \$ 935 Conducted system development test and evaluation at Yuma Proving Grounds, AZ (fatigue and wear).
- (U) \$ 4,615 Conducted engineering and manufacturing development of pototypes at Benet Labs and Watervliet Arsenal, NY.

(U)Total \$ 36,180

R-1 Line Item 57

BUDGET ACTIV 4 - Demon		/alidation	PE NUMBER AND TITLE 0603635M Marine Corps Ground	PROJEC C2112		
			Combat/Supporting Arms Systems			
(U) FY 1999 F	Planned Prog	gram:				
• (U) \$	2,100	Provide government program management support.				
• (U) \$	2,778	ARDEC contine matrix development engineering to sy		evention.		
• (U) \$	116	Provide other government development engineering to	• • • • •			
• (U) \$	21,525	Continue and complete contractor development engine Ignition System, Modular Artillery Charge System Co				
		performance established in the Joint Operational Requ		reduce risk and enhance system		
• (U) \$	2,774	Conduct system development test and evaluation at Y				
• (U) \$	2,617	Conduct engineering and prototype manufacturing at I				
• (U) \$	422	Portion of extramural program reserved for Small Bu	siness Innovation Research (SBIR) assessment in acco	ordance with 15 USC 638.		
(U)Total\$	32,332					
U) FY 2000 P	lanned Prog	ram:				
• (U) \$	2,100	Program management support.				
• (U) \$	2,200	ARDEC continue matrix development engineering to	system, logistics, safety, quality assurance, corrosion p	revention.		
- (∪) ⊅	9,188	Engineering and manufacturing development (EMD) of	contract increment.			
• (U) \$	2,100	Provide other government development engineering su	· · · · · · · · · · · · · · · · · · ·			
(U) \$(U) \$,			domonstration)		
(U) \$(U) \$(U) \$	7,649	Conduct technical test series (fatigue, recoil durability	, cold, hot/humid, corrosion, transportability, logistics	demonstration).		
(U) \$(U) \$		Conduct technical test series (fatigue, recoil durability	, cold, hot/humid, corrosion, transportability, logistics	demonstration).		
(U) \$(U) \$(U) \$	7,649	Conduct technical test series (fatigue, recoil durability	, cold, hot/humid, corrosion, transportability, logistics	demonstration).		
(U) \$(U) \$(U) \$	7,649	Conduct technical test series (fatigue, recoil durability	, cold, hot/humid, corrosion, transportability, logistics	demonstration).		
(U) \$(U) \$(U) \$	7,649	Conduct technical test series (fatigue, recoil durability	, cold, hot/humid, corrosion, transportability, logistics	demonstration).		

R-1 Line Item 57

RDT&E BUDGET IT	TEM JUS	TIFICAT	TION SH	HEET (R	R-2 Exhi	bit)		DATE Feb	ruary 19	99
BUDGET ACTIVITY 4 - Demonstration/Validation	060	PE NUMBER AND TITLE 0603635M Marine Corps Ground Combat/Supporting Arms Systems					PROJEC C211 :			
B. (U) Project Change Summary (U) Previous President's Budget (U) Adjustments to Previous President's Budget (U) Current Budget Submit		FY 1998 37,635 -1,455 36,180	5 2 +	1999 5,409 6,923 2,332	FY 2000 8,349 +14,888 23,237					
 (U) Change Summary Explanation: (U) Funding: The FY 1998 decrease is dincrease for program restructure. The FY 2000 (U) Schedule: Changes show restructure of (U) Technical: Not applicable. 	2000 increase			• •					n Congressio	nal
C. (U) Other Program Funding Summary (APPN, BLI #, NOMEN) (U) PMC, BLI #218500, Howitzer, Medium Towed 155MM XM777 (LW 155) (U) Related RDT&E: PE 0604854A (Artillery Science)	FY 1998 0 ystems-Engine	FY 1999 0 eering Devel	FY 2000 0 opment)	FY 2001 9,763	<u>FY 2002</u> 91,427	FY 2003 115,445	FY 2004 144,231	FY 2005 88,241	To <u>Compl</u> 0	Tota <u>Cos</u> 449,10

R-1 Line Item 57

DATE RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit) February 1999 BUDGET ACTIVITY PE NUMBER AND TITLE **PROJECT** 4 - Demonstration/Validation 0603635M Marine Corps Ground C2112 **Combat/Supporting Arms Systems** (U) Schedule Profile Schedule Profile A ctivity FY95 FY96 FY97 FY98 FY99 FY00 FY01 FY02 FY03 FY04 FY05 FY06 FY07 FY08 FY09 LW155 Milestone 0 LW155 Milestone I/II Shoot-off LW155 EMD Phase DT/MOT&E Milestone III USMC LW 155 Production Dollars (\$M) FY95 FY96 FY98 FY99 FY00 FY01 FY06 FY07 FY08 FY97 Total USMC RDTE USMC LW155 Prod 10.0 144.2 449.2 Quantity R-1 Line Item 57 **Budget Item Justification**

RDT&E PROGRAM ELEMENT/P	DATE February 1999			
BUDGET ACTIVITY 4 - Demonstration/Validation		PE NUMBER AND TITE 0603635M Ma Combat/Suppe	PROJECT C2112	
A. (U) Project Cost Breakdown	FY 1998	FY 1999	FY 2000	
Project Cost Categories				
a. Primary Hardware Development	24,225	21,947	9,188	
b. Government Developmental Engineering	4,305	2,894	4,300	
c. Program Management Support	2,100	2,100	2,100	
d. Test and Evaluation	935	2,774	7,649	
e. Conduct Engineering and Prototype Manufacturing, AZ Benet & Watervliet Arsenal, NY	4,615	2,617	0	
Total	36,180	32,332	23,237	
	R-1	Line Item 57	E	Budget Item Justification

RDT	&E PROG	RAM EL	EMENT/PF	ROJECT	COST B	REAKDO	OWN (R-	3)	DATE F 6	February 199			
BUDGET ACTIVITY 4 - Demonstrate	tion/Validati	ion			060363	R AND TITLE 5M Marin t/Support	•	PRO C2					
B. <u>Budget Acquisit</u>	ion History and	l Planning Inf	formation										
Performing Organi													
Contractor or	Contract												
Government	Method/Type	Award or	Performing	Project	Total								
Performing	or Funding	Obligation	Activity	Office	Prior to				BudgetTo	Total			
<u>Activity</u>	<u>Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>	<u>FY 1998</u>	FY 1998	FY 1999	FY 2000	<u>Complete</u>	<u>Program</u>			
Product Developme													
Cadiliac Gage Textron, Inc., New Orleans, LA	CPIF	Mar 1997	28,640	28,640	5,639	23,001	0	0	0	28,640			
VSEL	CPIF	Dec 1998	35,612	35,612	0	1,224	19,900	9,188	5,300	35,612			
Barrow-In-Furance UK	Crif	Dec 1998	33,012	33,012	U	1,224	19,900	9,188	3,300	55,012			
Kara	CPIF	Feb 1999	2,491	2,491	0	0	1,625	0	866	2,491			
Bedford, PA													
ARDEC, Picatinny, NJ	MIPR	Oct 1996	12,115	12,115	3,227	2,110	2,778	2,200	1,800	12,115			
ARDEC, Picatinny, NJ (Source Selection Evaluation Board)	MIPR	Oct 1996	4,494	4,494	4,494	0	0	0	0	4,494			
Misc Government Accounts	MIPR	Various	11,119	11,119	5,408	2,195	116	2,100	1,300	11,119			
SBIR	N/A	N/A	N/A	N/A	0	0	422	0	0	422			
Support and Mana	gement Organiz												
PMO LW 155, Picatinny, NJ	MIPR	Oct 1996	15,867	15,867	7,562	2,100	2,100	2,100	2,005	15,867			
				R	-1 Line Item 5	57		В	udget Item Ju	ıstification			

(Exhibit R-3, Page 10 of 32)

RDT	&E PROG	RAM EL	EMENT/PF	ROJECT	COST B	REAKDO	OWN (R-	3)	DATE F (February 1999				
BUDGET ACTIVITY 4 - Demonstrat	ion/Validati	on			060363	R AND TITLE 5M Marin t/Support	·	PROJEC C2112						
B. <u>Budget Acquisit</u>	ion History and	Planning In	formation											
Performing Organiz	zations													
Contractor or	Contract													
Government	Method/Type	Award or	Performing	Project	Total									
Performing	or Funding	Obligation	Activity	Office	Prior to				Budget to	Total				
<u>Activity</u>	<u>Vehicle</u>	<u>Date</u>	<u>EAC</u>	<u>EAC</u>	FY 1998	FY 1998	FY 1999	FY 2000	<u>Complete</u>	<u>Program</u>				
Test and Evaluation														
Misc Government	MIPR	Varies	3,376	3,376	3,376	0	0	0	0	3,376				
Activities														
Yuma Proving	MIPR	Feb 1996	1,900	1,900	1,900	0	0	0	0	1,900				
Ground, Yuma, AZ														
(Shoot-off)														
Yuma Proving	MIPR	Oct 1996	12,929	12,929	737	935	2,774	7,649	834	12,929				
Ground, Yuma AZ														
Government Furnis	hed Property													
	Contract													
	Method/Type	Award or			Total									
Item	or Funding	Obligation	Delivery		Prior to				Budget to	Total				
<u>Description</u>	<u>Vehicle</u>	<u>Date</u>	<u>Date</u>		FY 1998	FY 1998	FY 1999	FY 2000	<u>Complete</u>	<u>Program</u>				
Product Developme	nt Property													
Benet Labs,	MIPR	Various	Various		2,111	4,615	2,617	0	0	9,343				
Watervliet Arsenal,														
NY														
Support and Manag	gement Propert	y												
Test and Evaluation	Property													
	• •													
				R	-1 Line Item 5	57		Rı	udget Item Ju	stification				
				IX.	-1 Line nein .	, ,			oibit D. 2. Doc					

(Exhibit R-3, Page 11 of 32)

RDT&E PROGRAM ELEMENT)WN (R-	3)	DATE February 1999				
BUDGET ACTIVITY 4 - Demonstration/Validation		M Marin	e Corps G ng Arms				PROJECT C2112		
Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation Total Project	Total Prior to	FY 1998 33,145 2,100 935 36,180	FY 1999 27,458 2,100 2,774 32,332	FY 2000 13,488 2,100 7,649 23,237	Budget to <u>Complete</u> 9,266 2,005 834 12,105	Total <u>Program</u> 104,236 15,867 18,205 138,308			
	R-1 Line Item 57			Ві	udget Item Ju	ıstification			

RDT&E BUDGET IT	EM JUS	TIFICA	TION	SHEET (F	R-2 Exhi	bit)		DATE Fe	bruary 19	999
BUDGET ACTIVITY 4 - Demonstration/Validation			0	NUMBER AND 603635M ombat/Su	Marine C				-	PROJECT C2113
COST (In Thousands)	FY 1998 Actual	FY 1999 Estimate	FY 2000 Estimate		FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
C2113 Predator Short Range Assault Weapon (SRAW)	4611	12781	133	71 492	0	0	0	0	0	144060
Quantity of RDT&E Articles	25	51	1	03						

A. (U) Mission Description and Budget Item Justification:

(U) Predator (SRAW) will provide the Marine Corps with a lethal, disposable, fire and forget, top-attack, soft launch for firing from enclosed spaces, proliferable, accurate, night vision capable, lightweight, main battle tank killer. Modularity of the system will allow development of optimal warheads (flame, bunker-busting, multi-purpose) to fit on the flight module.

(U) FY 1998 Accomplishments:

- (U) \$ 4,385 Continued Engineering & Manufacturing Development (EMD) Phase of program. This effort forward financed with \$4,296M of FY97 funds.
- (U) \$ 226 Provided Program Management (PM)/In-House Support

(U)Total \$ 4,611

(U) FY 1999 Planned Program:

- (U) \$ 8,700 Continue EMD Phase of program.
- (U) \$ 419 Conduct Modeling & Simulation Independent Validation and Verification.
- (U) \$ 380 Preparation for Operational Testing.
- (U) \$ 2,419 Engineering/Technical services to complete Developmental Testing (DT)
- (U) \$ 609 PM/In-House Support/Engineering Change Proposals (ECP)
- (U) \$ 254 Portion of extramural program reserved for Small business Innovation Research assessment in accordance with 15 USC 638.

(U)Total \$ 12,781

R-1 Line Item 57

RDT&E BUDGET ITEM JU	STIFICATIO	N SHEET	(R-2 Exhibit)	DATE February 1999
SUDGET ACTIVITY 4 - Demonstration/Validation			ID TITLE Marine Corps Ground upporting Arms Systems	PROJEC C2113
U) FY 2000 Planned Program: (U) \$ 7,000 Complete EMD Phase of the program: (U) \$ 1,971 Conduct Operational Testing. (U) \$ 205 Complete Modeling & Simulation (U) \$ 1,330 PM/In-House Support/ECPs (U) \$ 2,865 Engineering/Technical Services Structure (U) Total \$ 13,371				
B. (U) Project Change Summary U) Previous President's Budget U) Adjustments to Previous President's Budget U) Current Budget Submit U) Change Summary Explanation:	FY 1998 2,311 +2,300 4,611	FY 1999 9,827 +2,954 12,781	FY 2000 0 +13,371 13,371	
 (U) Funding: Adjustments to funding are due to progr (U) Schedule: Operational Testing (OT) rescheduled with MS III rescheduled for 4th Qtr FY 2000. (U) Technical: Missile sensor problems resulted in ad 	to 2 nd Qtr FY 2000	from 2 nd Qtr FY	1999 due to restructuring of the pr	ogram and EMD program extension
		,		
	R	-1 Line Item 57	ı	Budget Item Justification

(Exhibit R-2, Page 14 of 32)

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE

February 1999

BUDGET ACTIVITY

4 - Demonstration/Validation

PE NUMBER AND TITLE

0603635M Marine Corps Ground

Combat/Supporting Arms Systems

PROJECT **C2113**

C. (U) Other Program Funding Summary FY 2001 FY 2002 FY 2003 FY 1998 FY 1999 FY 2000 FY 2004 FY 2005 To Total (APPN, BLI #, NOMEN) Cost Compl (U) PMC, 308900, Predator (SRAW) 145,083 475,621 0 0 103,684 27,142 26,120 26,902 146,690

(U) Related RDT&E: Not Applicable

D. (U) Schedule Profile:

		Τ	Г	19	97	Г	19	98	Τ	1	999)		20	00	Т	2	00	1	Т	20	02	Т	2	2003	3		200	4	20	005
Task Name	Start	4	1	2	3 4	1	2	3 4	1	2	2 3	4	1	2	3	4	1 2	2 3	3 4	1	2	3	4	1	2 3	4	1	2 3	4	1 2	3 4
Milestone II Approval	6/4/94	T				Г			T							T				Т			T								
Engineering and Manufacturing Design Phase	6/4/94	Ë				_			-					-	,	T				1			T								
Contract Award	6/4/94	ľ				1			1											1											
Preliminary Design Review (PDR)	9/13/94	ľ				Ť			1	····		-				1				1						-					
Fab & Test Engineering Models	4/13/95					1			1											1		CHINC									
Critical Design Review (CDR)	10/21/96	Г	٠			Ť'''		1	1	T								T	1	1	-					Ĩ					
Fab Tech Eval Hardware	7/8/9€		4			4			1											1						-					
Development Testing (DT)	11/11/96	1				-			+									T		1			T								
LRIP of IOT&E Hardware	7/28/99	l	1			1		m	1				10000					1		1											
Initial Operational T&E (IOT&E)	1/6/00	1	T			T			1											1			T								
MS III Approval	9/2/00	1				1	-	1	1							•		1		1		CHIIC									
Production, Fielding/Deployment & Operation Support	11/22/00	1				T		l	1	Ţ.,									-	H					-	-					—
Production Contract Award	11/22/00	ľ				1			1								٠	-		1						-					
Initial Operational Capability (Est.)	3/12/03	ľ	T			Ť'''		T	Ť									T		1	1				٠	-					
Full Operational Capability (Est.)	6/25/08	1				1		m	1										-	1						-					

R-1 Line Item 57

RDT&E PROGRAM ELEMENT/	PROJECT (COST BREAK	DOWN (R-3)	DATE February 1999
BUDGET ACTIVITY 4 - Demonstration/Validation			.E rine Corps Ground orting Arms System	PROJECT C2113
A. (U) Project Cost Breakdown a. Primary Hardware Development	FY 1998 240 0 240 0 840 1025 0 875 150 930 0 930 270 90 60 120 430 650 0 226 0 4,611	FY 1999 0 0 0 0 0 1030 2000 0 0 1860	FY 2000 0 0 0 0 0 0 1490 0 0 0 1490 0 2330 980 180 90 710 460 820 2865 1330 2176 13,371	
	R-1	Line Item 57		Budget Item Justification

(Exhibit R-3, Page 16 of 32)

									DATE F e	ebruary 19
BUDGET ACTIVITY 4 - Demonstra					060363	R AND TITLE 5M Marin t/Supporti				
B. <u>Budget Acquis</u>	ition History and	l Planning Inf	formation							
Performing Organ										
Contractor or	Contract	A 1	ъ с :	ъ .	m . 1					
Government Performing	Method/Type or Funding	Award or Obligation	Performing Activity	Project Office	Total Prior to				Budget to	Total
Activity	Vehicle	Date	EAC	EAC	FY 1998	FY 1998	FY 1999	FY 2000	Complete	Program
Product Developm			<u>210</u>	<u> 2 </u>	<u> </u>	<u> </u>		112000	<u> </u>	<u> </u>
Lockheed Martin	SS/CPIF	2 June 94	114,564	114,564	94,479	4,385	8,700	7,000	2000	114564
Electronics and										
Missiles, Orlando										
Support and Man	-		21 140	21 140	15 5 47	0	2 410	2.965	217	21140
NSWC Dahlgren, VA	WR	1 Oct 96	21,148	21,148	15,547	0	2,419	2,865	317	21148
Miscellaneous	Various	Various	4,687	4,687	2,093	226	863	1,330	175	4687
Test and Evaluation	on Organizations	š	2.25	2.25:	_	_	200	4.051	_	2251
Marine Corps			2,351	2,351	0	0	380	1,971	0	2351
Operational Test Activity										
CECOM	MIPR		1,310	1,310	686	0	419	205	0	1310
2220111			1,510	1,510	000	O	117	203	O	1310

JECT COST B	REAKDO	February 1999			
060363	5M Marin			·	PROJECT C2113
Total Prior to <u>FY 1998</u>	<u>FY 1998</u>	FY 1999	FY 2000	Budget to Complete	Total <u>Program</u>
Total Prior to FY 1998 94,479 17,640 686 112,805	FY 1998 4,385 226 0 4,611	FY 1999 8,700 3,282 799 12,781	FY 2000 7,000 4,195 2,176 13,371	Budget to Complete 0 492 0 492	Total Program 114,564 25,835 3,661 144,060
R-1 Line Item 5	37		Rı	ıdaet İtem .lı	ıstification
	Total Prior to FY 1998 Total Prior to FY 1998 94,479 17,640 686 112,805	Total Prior to FY 1998 Total Prior to FY 1998 FY 1999 FY 1998 FY 1998 FY 1999 FY 1998 FY 1999 FY 1998 FY 1999 FY 1999 FY 1998 FY 1999 FY 1999 FY 1999 FY 1998 FY 1999 FY 1999 FY 1999 FY 1998 FY 1999 FY 1999 FY 1998 FY 1999 FY 1999 FY 1999 FY 1998 FY 1999 FY 1999 FY 1999 FY 1999 FY 1999 FY 1999 FY 1998 FY 1999	Total Prior to FY 1998 FY 1998 FY 1998 FY 1998 FY 1999 FY 2000 Total Prior to FY 1998 FY 1998 FY 1999 FY 2000 FY 1998 FY 1998 FY 1999 FY 2000 FY 2000 FY 1998 FY 1999 FY 2000 FY 1998 FY 1999 FY 2000 FY 2000 FY 1998 FY 1999 FY 2000 FY 2000 FY 1998 FY 1999 FY 2000 FY 2000 FY 2000 FY 1998 FY 1999 FY 2000 FY 200	Total Prior to FY 1998 FY 1999 FY 2000 FY 2000 Prior to FY 1998 FY 1999 FY 2000 Prior to FY 1998 FY 1999 FY 2000 Prior to FY 1998 Prior to FY 1999 Prior to FY 1999 Prior to FY 1998 Prior to FY 1999 Prior to FY 2000 Prior to FY 1998 Prior to FY 1999 Prior to FY 2000 Prior to FY 1998 Prior to FY 1999 Prior to FY 2000 Prior to FY 1998 Prior to FY 1999 Prior to FY 2000 Prior to FY 1998 Prior to FY 1999 Prior to FY 2000 Prior to FY 1998 Prior to FY 1999 Prior to FY 2000 Prior to FY 1998 Prior to FY 1999 Prior to FY 2000 Prior to FY 1998 Prior to FY 1999 Prior to FY 2000 Prior to FY 1998 Prior to FY 1999 Prior to FY 2000 Prior to FY 1998 Prior to FY 1999 Prior to FY 2000 Prior to FY 1998 Prior to FY 1999 Prior to FY 2000 Prior to FY	

(Exhibit R-3, Page 18 of 32)

RDT&E BUDGET IT	EM JUS	STIFICA	TION S	HEET (F	R-2 Exhi	bit)		DATE Fe	bruary 1	999
BUDGET ACTIVITY 4 - Demonstration/Validation					PROJECT C2256					
COST (In Thousands)	FY 1998 Actual	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
C2256 Integrated Infantry Combat System (IICS)	0	730	751	768	0	0	0	0	0	2249
Quantity of RDT&E Articles										

A. (U) <u>Mission Description and Budget Item Justification</u>: (U) USMC name for this program is now Integrated Infantry Combat System (IICS) for dismounted combat Marines. The program will enhance the Marine's battlefield capabilities through the development and integration of an assortment of Marine systems/components and technologies into a cohesive, timely and combat effective system. These systems/components include weapon, integrated helmet assembly, protective clothing, communications and target acquisition technologies. This will provide the infantryman with increased lethality, survivability and situational awareness enhancements. Initial funding in this line will be utilized to determine and exploit integration opportunities on existing infantry equipment which will be fielded in the near future. Funds will also be utilized for the Research & Development of a future integrated system which is modular in design which will enhance the infantrymans mobility, lethality, survivability and communications.

(U) FY 1998 Accomplishments:

(U)Total \$ 0 FY 1998 funding is contained in PE 0603640M.

(U) FY 1999 Planned Program:

•	(U) \$	117	Transition from the Technology Demonstration Phase to the Program Definition and Risk Reduction (PDRR) phase. Participate fully in the
			Joint Army/Marine Corps program. Develop Marine unique sub-systems and aspects.

- (U) \$ 119 Initiate integration of existing infantry equipment as determined and recommended by previous studies.
- (U) \$ 476 Studies, analysis and support services.
- (U) \$ 18 Portion of extramural program reserved for Small Business Innovation Research assessment in accordance with 15 USC 638.

(U)Total\$ 730

R-1 Line Item 57

RDT&E BUDGET ITEM	JUSTIFICATION SHEE	T (R-2 Exhibit)	DATE February 1999
JDGET ACTIVITY - Demonstration/Validation	060363	R AND TITLE 5M Marine Corps Groun t/Supporting Arms Syste	
	try equipment as determined and recordination w/US Army Land Warrit services.		
J. (U) Project Change Summary J.) Previous President's Budget J.) Adjustments to Previous President's Budget J.) Current Budget Submit J.) Change Summary Explanation: (U) Funding: Decrease of \$14k in FY 1999 due (U) Schedule: Not Applicable (U) Technical: Not Applicable	FY 1998 FY 1999 0 744 0 -14 0 730 e to minor affordability changes. FY 0	853 -102 751	mic assumptions and general adjustments

(Exhibit R-2, Page 20 of 32)

RDT&E BUDGET ITE	DATE February 1999									
BUDGET ACTIVITY 4 - Demonstration/Validation		96 NU 060 Cor			ојест 2256					
C. (U) Other Program Funding Summary	<u>FY 1998</u>	<u>FY 1999</u>	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005	To	Total
(U) PE 64657M,C2256 (RDT&E,N)	0	0	0	0	1768	1784	1801	1817	Complete Cont.	Cost Cont.
(U) Related RDT&E: (U) PE 0602131M (Marine Corps Landing (U) PE 0603640M (Marine Corps Advance (U) PE 64657M (US Army Land Warrior Proceedings) (U) PE 0603640M (Marine Corps Advance (U) PE 64657M (US Army Land Warrior Proceedings) (U) PE 0603640M (Marine Corps Advance (U) PE 64657M (US Army Land Warrior Proceedings) (U) PE 0603640M (Marine Corps Advance (U) PE 64657M (US Army Land Warrior Proceedings) (U) PE 0603640M (Marine Corps Advance (U) PE 64657M (US Army Land Warrior Proceedings)	d Technolog		ration)							
D. (U) Schedule Profile:										
			R-1 Line	Item 57			Budç	get Item Ju	stification	

February 1999

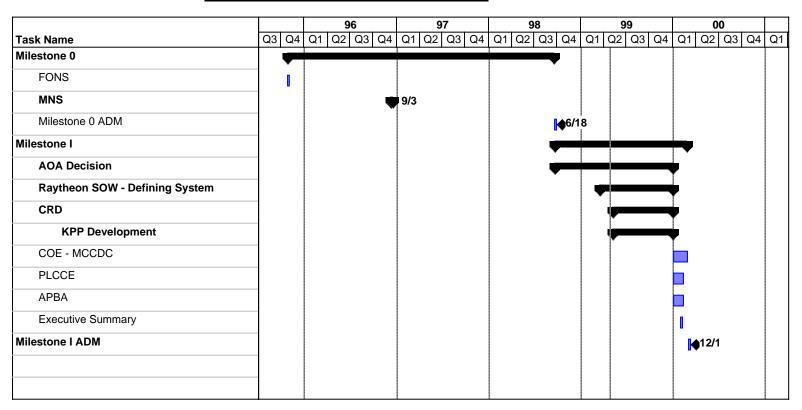
BUDGET ACTIVITY

4 - Demonstration/Validation

PE NUMBER AND TITLE

0603635M Marine Corps Ground Combat/Supporting Arms Systems

INTEGRATED INFANTRY COMBAT SYSTEM



	RDT&E BUDGET IT	EM JUS	STIFICA	TION S	HEET (F	R-2 Exhi	bit)		DATE Fe	bruary 19	999
	ET ACTIVITY Demonstration/Validation		06	iumвек and 03635M I mbat/Suj	Marine C				PROJECT C2507		
	COST (In Thousands)	FY 1998 Actual	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
C2507	' Small Unit Riverine Craft (SURC)	0	0	3038	1750	226	10	0	0	0	5024
	Quantity of RDT&E Articles										

A. (U) Mission Description and Budget Item Justification:

(U) The Small Unit Riverine Craft (SURC) will provide tactical mobility and a weapons platform for elements of a Marine Air Ground Task Force (MAGTF) Ground Combat Element (GCE) in the Riverine Environment. The SURC will replace the Rigid Raiding Craft (RRC) which was fielded 12 years ago. It will augment the larger Riverine Assault Craft (RAC) in riverine operations to include troop transport, troop insertion, and extraction, convoy ops, and application of fires.

- (U) FY 1998 Accomplishments: Not Applicable.
- (U) FY 1999 Planned Program: Not Applicable.

(U) FY 2000 Planned Program:

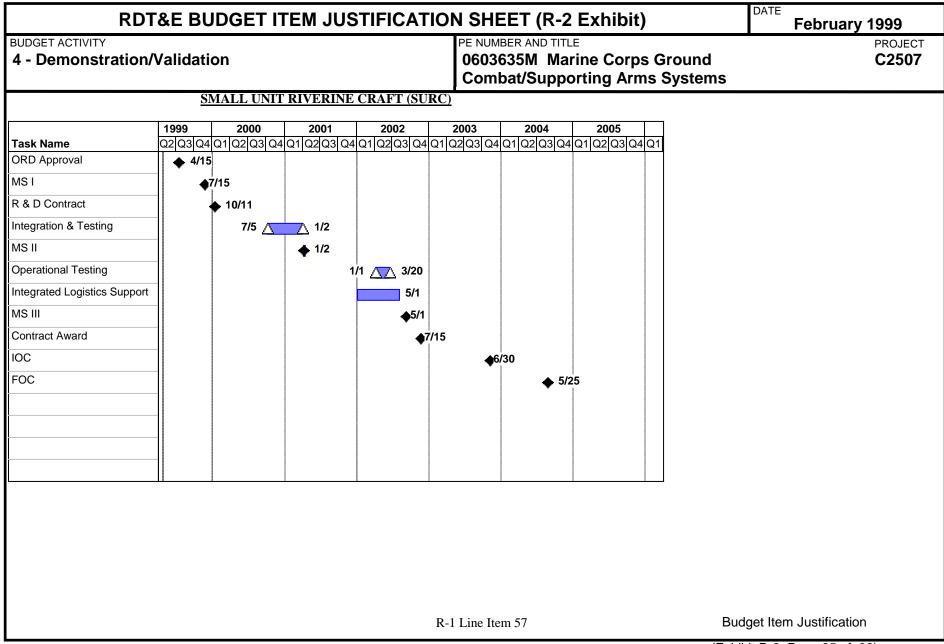
- (U) \$ 368 System Analysis for SURC integration and testing of non-developmental components.
- (U) \$ 325 Developmental Test Plan/Conduct Developmental Testing / Performance and Functioning testing.
- (U) \$ 150 Commercial Design Review for non-developmental integration.
- (U) \$ 625 Procure Candidate Hulls and conduct modifications for the integration of non-developmental candidate sub-systems.
- (U) \$ 1,500 Procure and Integrate candidate Engines, Propulsion System, Navigation and Communication System, and Weapon System Mounts into Hulls.
- (U) \$ 70 Provide Government Project Management and Documentation Support for the SURC Program.

(U)Total \$ 3,038

R-1 Line Item 57

RDT&E BUDGET IT	EM JUS	TIFICA	TION :	SHEET ((R-2 Exh	ibit)		DATE Fe	bruary 19	99
BUDGET ACTIVITY 4 - Demonstration/Validation		0		D TITLE Marine (upporting			ROJECT 2507			
B. (U) Project Change Summary		FY 199	8	FY 1999	FY 2000					
(U) Previous President's Budget(U) Adjustments to Previous President's Budget(U) Current Budget Submit		(0 0 0	0 0 0	0 +3038 3038					
(U) Change Summary Explanation: (U) Funding: New Start										
(U) Schedule: New Start										
(U) Technical: N/A										
C. (U) Other Program Funding Summary (APPN, BLI #, NOMEN) (U) PMC BLI # 667000, SURC	FY 1998 0	<u>FY 1999</u> 0	FY 200		1 FY 2002 0 3189		FY 2004 2219	FY 2005 0	To <u>Compl</u> 0	Total <u>Cost</u> 7771
(U) Related RDT&E										
E. (U) Schedule Profile										
			R-1 Li	ne Item 57			Bud	get Item Ju	stification	

(Exhibit R-2, Page 24 of 32)



(Exhibit R-2, Page 25 of 32)

RDT	&E PROG	RAM EL	EMENT/PF	ROJECT	COST B	REAKD	OWN (R-	3)	DATE F (ebruary 19	99
BUDGET ACTIVITY 4 - Demonstra	tion/Validat	ion			060363	R AND TITLE 5M Marir t/Support			ROJECT 2507		
A. (U) Project Cos a. Government Deve development.	elopmental Engi	neering / Cont	ract		0	<u>′ 1999</u> 0	FY 2000 2125				
b. Test and Evaluatic. Conduct Engineerd. Program Manage	ring and Prototy	pe Developme	nt.		0 0 0	0 0 0	325 518 70				
Total	••				0	0	3038				
B. <u>Budget Acquisit</u> Performing Organi	-	l Planning In	<u>formation</u>								
Contractor or Government Performing Activity	Contract Method/Type or Funding Vehicle	Award or Obligation Date	Performing Activity EAC	Project Office EAC	Total Prior to FY 1998	FY 1998	FY 1999	FY 2000	Budget to Complete	Total Program	
Product Developme NSWC Carderock, Suffolk, VA			2651	2651	0	0	0	2125	526	2651	
NSWC Carderock, Suffolk, VA	WR	Oct 1999	1289	1289	0	0	0	518	771	1289	
Support and Mana ALS Inc. triangle VA	MIPR	Oct 1999	150	150	0	0	0	70	80	150	
Test and Evaluation NSWC, Carderock, Suffolk VA		Oct 1999	934	934	0	0	0	325	609	934	
				R	-1 Line Item :	57		Ві	udget Item Ju	ustification	
				R	-1 Line Item :	57			udget Item Justification		

(Exhibit R-3, Page 26 of 32)

RDT&E PRO	DATE F 6	February 1999						
BUDGET ACTIVITY 4 - Demonstration/Valid	lation	060363	R AND TITLE 5M Marin t/Support		PROJECT C2507			
Government Furnished Proper N/A Contract Method/Ty Item or Funding Description Vehicle Product Development Property Support and Management Pro	pe Award or Obligation <u>Date</u>	Delivery <u>Date</u>	Total Prior to FY 1998	FY 1998	FY 1999	FY 2000	Budget to Complete	Total <u>Program</u>
Subtotal Product Development Subtotal Support and Manageme Subtotal Test and Evaluation Total Project	nt		Total Prior to FY 1998 0 0 0	FY 1998 0 0 0 0	FY 1999 0 0 0 0	FY 2000 2643 70 325 3038	Budget to <u>Complete</u> 1297 80 609 1986	Total Program 3940 150 934 5024
			R-1 Line Item 5	57			udget Item Ju	

(Exhibit R-3, Page 27 of 32)

RDT&E BUDGET IT	TEM JUS	STIFICA	TION S	SHEET (F	R-2 Exhi	bit)		DATE Fe	bruary 19	999
BUDGET ACTIVITY 4 - Demonstration/Validation	06	NUMBER AND 603635M ombat/Su	Marine C		-	PROJECT C2508				
COST (In Thousands)	FY 1998 Actual	FY 1999 Estimate	FY 2000 Estimate	FY 2001 Estimate	FY 2002 Estimate	FY 2003 Estimate	FY 2004 Estimate	FY 2005 Estimate	Cost to Complete	Total Cost
C2508 Light Strike Vehicle	0	0	162	4 1973	4034	2753	246	245	122	10997
Quantity of RDT&E Articles										

A. (U) <u>Mission Description and Budget Item Justification:</u> This project develops a joint MV-22 aircraft transportable, light strike, wheeled vehicle. The Light Strike Vehicle (LSV) will provide reconnaisance units with a high mobility weapons platform. It will improve ground reconnaissance mobility and support a wide variety of missions. The LSV will replace the Fast Attack Vehicles (FAVs) currently employed throughout the Marine Air Ground Task Force (MAGTF).

(U) FY 1998 Accomplishments: Not Applicable.

(U) FY 1999 Planned Program: Not Applicable.

(U) FY 2000 Planned Program:

- (U) \$ 1200 Demonstration and Validation of two contract design vehicles.
- (U) \$ 174 In House program management and TAD/travel.
- (U) \$ 250 Engineering Support.

(U)Total \$ 1,624

R-1 Line Item 57

RDT&E BUDGET ITEN	February 1999								
BUDGET ACTIVITY 4 - Demonstration/Validation		060	3635M N	R AND TITLE 85M Marine Corps Ground at/Supporting Arms Systems					ROJECT 2508
B. (U) Project Change Summary	FY 1998	<u>FY</u>	1999	FY 2000					
(U) Previous President's Budget(U) Adjustments to Previous President's Budget(U) Current Budget Submit	()))	0 0 0	0 +1624 1624					
(U) Change Summary Explanation:									
(V) Funding: Transition from Advanced Techn	ology Demonstration	efforts.							
(U) Schedule: Not applicable									
(U) Technical: Not applicable									
C. (U) Other Program Funding Summary (APPN, BLI #, NOMEN) (U) 204000 Light Strike Vehicle	<u>Y 1998</u> <u>FY 1999</u>	FY 2000	FY 2001	FY 2002	FY 2003 0	FY 2004 16080	FY 2005 29459	To <u>Compl</u>	Total <u>Cost</u>
(U) Related RDT&E: SOCCOM joint participation in I	LSV program.	295	510	545					
		R-1 Line	Item 57			Budç	get Item Jus	tification	

(Exhibit R-2, Page 29 of 32)

RDT&E BUDGET ITEM JUSTIFICATION SHEET (R-2 Exhibit)

DATE

February 1999

BUDGET ACTIVITY

4 - Demonstration/Validation

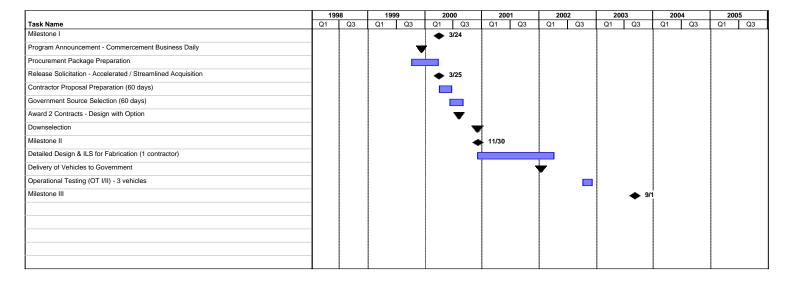
PE NUMBER AND TITLE

PROJECT **C2508**

0603635M Marine Corps Ground Combat/Supporting Arms Systems

D. (U) Schedule Profile

LIGHT STRIKE VEHICLE



R-1 Line Item 57

Performing or Fu Activity Vehic Product Development Org	and Supporting Support	rt t			060363 Comba		ne Corps G ting Arms S FY 2000 1200				2508	
Systems Engineering a. Program management a b. Government Engineering c. Miscellaneous Total B. Budget Acquisition His Performing Organizations Contractor or Contractor or Contractor or Government Meth Performing or Fu Activity Vehic Product Development Organizations	and Supporting Support	t			0							
a. Program management a b. Government Engineerin c. Miscellaneous Total B. Budget Acquisition His Performing Organizations Contractor or Contractor or Government Meth Performing or Fu Activity Vehic Product Development Organization	ing Support	t			~	0	1200					
b. Government Engineering. Miscellaneous Total B. Budget Acquisition History Performing Organizations Contractor or Contractor or Contractor or Government Meth Performing or Fu Activity Vehicle Product Development Organizations Contractor or Contractor	ing Support	t			U	0						
c. Miscellaneous Total B. Budget Acquisition His Performing Organizations Contractor or Contractor or Government Meth Performing or Fu Activity Vehic Product Development Organizations	istory and				Λ	0	274 120					
B. Budget Acquisition His Performing Organizations Contractor or Contractor or Government Meth Performing or Fu Activity Vehic Product Development Organizations		Planning Inf			0	0	30					
B. Budget Acquisition His Performing Organizations Contractor or Contractor or Government Meth Performing or Fu Activity Vehic Product Development Organizations		Planning Inf			0	0	30 1624					
Contractor or Contractor or Government Meth Performing or Fu Activity Vehicle Product Development Organization	• 6	- *************************************	<u>formation</u>									
Government Meth Performing or Fu Activity Vehic Product Development Org												
Performing or Fu Activity Vehic Product Development Org												
Activity Vehic Product Development Org	• 1	Award or	Performing	Project	Total							
Product Development Org	unding	Obligation	Activity	Office	Prior to				Budget to	Total		
		<u>Date</u>	<u>EAC</u>	<u>EAC</u>	FY 1998	FY 1998	FY 1999	FY 2000	<u>Complete</u>	<u>Program</u>		
	ganization	ıs			_	_	_					
NSWC-Carderock,			3860	3860	0	0	0	1525	2335	3860		
MD												
Support and Management	it Organiza	ations	467	467	0	0	0	00	260	467		
Acquisition			467	467	0	0	0	99	368	467		
Logistics Systems,												
Dumfries, VA	!4!											
Test and Evaluation Orga NSWC-Carderock,	anizations		6670	6670	0	0	0	0	6670	6670		
MD			0070	0070	U	U	U	U	0070	0070		
MID												
				R	-1 Line Item 5	57		Вι	udget Item Ju	dget Item Justification		

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RDT&E PRO	RDT&E PROGRAM ELEMENT/PROJECT COST BREAKDOWN (R-3) BUDGET ACTIVITY PE NUMBER AND TITLE								
BUDGET ACTIVITY 4 - Demonstration/Valida	ation	060363	R AND TITLE 5M Marin t/Support		PROJECT C2508				
Government Furnished Property Contract Method/Typ Item or Funding Description Vehicle Product Development Property Support and Management Property	e Award or Obligation Delivery Date Date	Total Prior to FY 1998	FY 1998	FY 1999	FY 2000	Budget to Complete	Total <u>Program</u>		
Test and Evaluation Property									
Subtotal Product Development Subtotal Support and Management Subtotal Test and Evaluation Total Project		Total Prior to FY 1998	FY 1998	FY 1999	FY 2000 1525 99 0 1624	Budget to <u>Complete</u> 2335 368 6670 9373	Total Program 3860 467 6670 10997		
		R-1 Line Item s	57		В	udget Item Ju	ustification		